

~~Claims~~

~~1. A method for determining the position of a constant frequency interval in a telecommunication signal, in particular a frequency correction burst, said method comprising the steps of:~~

~~2. a) receiving said telecommunication signal;~~

~~3. b) detecting an occurrence of said constant frequency interval in said telecommunication signal;~~

~~4. c) obtaining a plurality of noise-reduced signal values by a noise-reducing processing of at least a part of said constant frequency interval in said telecommunication signal;~~

~~5. d) using said noise-reduced signal values for adapting a filter to the frequency of said constant frequency interval;~~

~~6. e) using said adapted filter to filter said telecommunication signal for generating filtered output values; and~~

~~7. f) determining a predefined reference point of said constant frequency interval on the basis of said filtered output values.~~

~~8. 2. The method of claim 1, wherein said predefined reference point is one of the beginning and the end of said constant frequency interval in said telecommunication signal.~~

~~9. 3. The method of claim 1, wherein said step f) comprises:~~

~~10. determining peak values of said filtered output values of said adapted filter, and at least one of:~~

4

5 g) detecting an amplitude change of said peak values
6 exceeding a predefined threshold, and
7

8 h) detecting a non-periodic time interval between said
9 peak values.

1 4. The method of claims 1, wherein said filter is a FIR
2 bandpass filter whose filter coefficients are at least some
3 of said noise-reduced signal values.

1 5. The method of claim 4, wherein said filter coefficients
2 of said filter are chosen to be a consecutive sequence of
3 said noise-reduced signal values representing essentially an
4 integral number of full cycles of said noise-reduced signal
5 values.

1 6. The method of claims 1, wherein each noise-reduced
2 signal value is an auto-correlation value or a cross-
3 correlation value between a first and a second section of
4 said telecommunication signal, said first and said second
5 section being displaced by a varying displacement.

1 7. The method of claim 6, wherein said occurrence of said
2 constant frequency interval in said telecommunication signal
3 is detected on the basis of said noise-reduced signal
4 values.

1 8. The method of claims 1, wherein said telecommunication
2 signal is a wireless mobile telephony signal and preferably
3 a GSM baseband signal.

1 9. An apparatus for determining the position of a constant
2 frequency interval in a telecommunication signal, said
3 apparatus comprising:

4
5 an analyzer for detecting an occurrence of said
6 constant frequency interval in said telecommunication
7 signal;

8
9 a noise-reducing filter unit for obtaining a plurality
10 of noise-reduced signal values by a noise-reducing

11 processing of at least a part of said constant
12 frequency interval in said telecommunication signal;
13
14 a coefficient generator using said noise-reduced signal
15 values for adapting a filter to the frequency of said
16 constant frequency interval;
17
18 said filter filtering said telecommunication signal for
19 generating filtered output values; and
20
21 a position detector for determining a predefined
22 reference point of said constant frequency interval on
23 the basis of said filtered output values.

1 10. The apparatus of claim 9, wherein the apparatus is a
2 mobile telephone.

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